

Evaluating Patient Satisfaction With Nurse-Led Wound Care Services

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Abstract— Background: The increasing incidence of chronic wounds, combined with the high number of patients requiring hospital services, has led to the concept of nurse-led wound care clinics to support general practitioners in the treatment and management of wounds.

Aim: This study aims to assess patients' perception of, and satisfaction with, wound care services in a tertiary healthcare setting in Riyadh, Saudi Arabia.

Methods: The study utilised a cross-sectional descriptive design and was conducted between September 2022 and October 2023, and data were collected via a client satisfaction questionnaire (CSQ-8).

Results: Our findings revealed very positive responses overall. Considered together (response options 4 and 3), a majority of respondents (91.3%) rated the quality of service they received as “excellent” or “good”, and 85.6% reported receiving the kind of service they wanted. Regarding overall satisfaction, 92.5% of respondents reported being “very satisfied” or “mostly satisfied” with the overall service they received.

Conclusion: This study reveals positive patient satisfaction with overall wound care services. However, there remains weakness in certain areas. This could be understood in more detail by conducting a qualitative study, so that action may be taken to further improve the quality of healthcare services provided to patients.

Keywords: Nurse-Led Wound Care Clinic; Patient Satisfaction; Wound Care; Wound Care Clinic.

I. INTRODUCTION

Chronic non-healing wounds can affect quality of life, cause serious events such as limb amputations or even premature deaths [1], and present a substantial economic burden on society and the healthcare system [2,3]. An evaluation of the clinical and economic burden associated with wound care in the tropics revealed a significant rise between 2013 and 2017, with a healthcare cost per patient ranging from \$15,789 to \$17,761 across the wound categories [4]. Similarly, a study conducted in Saudi Arabia revealed that hospitalisations and surgical treatments significantly raise the entire cost of healthcare when treating diabetic foot ulcers, with high direct medical expenditures [5].

Wound healing is affected by a complex interaction of factors, including physiological, psychosocial, and wound characteristics, and this emphasises the need for a multifactorial approach to detecting and intervening with ulcers [6]. Despite the recommendations of clinical practice standards, there exist deviations in surgical wound care practices, which vary from one clinical setting to another [7]. There remains a gap between implementing an effective referral system and the actual practice, despite paramount literature on the importance of wound care services and multidisciplinary team care [8].

Studies indicate that patients' knowledge, attitudes, and habits regarding wound care are not up to par, and that awareness is essential to bridge the gap between educational level and knowledge and beliefs [9,10]. As well as comprehensive pain assessment and cost-effective care, nurse-led wound care clinics can provide improved education and better social support to maximise the level of care for people with chronic wounds [11]. Wound care clinics support general practitioners in treating wounds [12], have high patient satisfaction scores, and result in decreased ED visits [13].

International studies have demonstrated positive perceptions of nurse-practitioner-led wound care [14-16]. Specialist wound clinics with trained wound care nurses (WCN) provide appropriate care and referral based on the wound care system [17], while the WCNs themselves benefit from a demanding but

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rewarding role influenced by the environment and challenges presented by individuals with pressure ulcers [18].

Furthermore, studies indicate that clinicians in wound care clinics face practical difficulties and challenges [19,20], and one study recommended testing and evaluating the efficacy of services in nurse-led clinics [21]. The literature emphasises the importance of evaluating services and client satisfaction as a way of measuring the efficacy of any health service, and to develop awareness of where improvements can be made [22]. It should also be remembered that patients' perceptions and views may differ according to their medical complexity and the specific type of wound; it is thus necessary to understand the level of satisfaction of a particular cohort of beneficiaries with the specific services they receive [23].

The importance of in-hospital wound care clinics in responding to patient needs is well established in the literature. The concept of nurse-led wound care clinics arose from the increasing incidence of chronic wounds, with a significant proportion of patients being treated in the tertiary healthcare setting, and the economic implication of such services. In order to enhance the services of these wound care clinics, it is essential to understand the beneficiaries' perception of such services. Thus, this study aims to examine the satisfaction of patients with nurse-led wound care clinics.

II. METHODOLOGY

Study design

This study utilised a cross-sectional, descriptive design and was carried out from September 2022 until October 2023.

Setting and participants

Participants were recruited from King Fahad Medical City (KFMC) in Riyadh, Saudi Arabia. This is a 1000-bed facility, incorporating multiple hospitals and centres, and providing healthcare services, including wound care, to the majority of Riyadh's population. Wound care and management in the facility is overseen by a nurse-led service utilising a multidisciplinary approach. The service is guided by policies and procedures, based on evidence-based practice, which are regularly updated to ensure the highest standards of care. A dedicated team of nine nurses, each with a specific job description and scope of practice, carries out this specialised service. The team's expertise and collaborative efforts ensure that patients receive

comprehensive and tailored wound care management, promoting optimal healing outcomes and patient well-being.

The study's target population comprised patients of the clinic who received wound care treatment. Of these, 160 participants were selected using the convenience sampling method.

Participation was voluntary, and both inpatient and outpatient recipients of the service were invited to participate. Participants were considered eligible if they were beneficiaries of the wound care services, were willing to participate in the survey, and were fluent in Arabic. Patients who were very sick and unable to respond to the survey were excluded from the study.

Sample size

Another study was used as a reference to estimate the required sample size [21]; assuming that 67.9% of patients were satisfied with the interprofessional approach to wound care among a patient population of 750 in a year, a sample size of 160 produces a two-sided 95% confidence interval with a width equal to 0.15 when the sample proportion is 0.679.

Data collection

Data were collected using a client satisfaction questionnaire (CSQ-8) [25] with good psychometric properties. This tool has excellent internal reliability, with Cronbach's alpha ranging from 0.83 to 0.93 [26] and a validity factor of 0.8 on average — a significant correlation with other instruments measuring satisfaction [27]. It includes questions about the causes of wounds, referral sources, and sociodemographic details such as age, gender, marital status, nature of patient service (inpatient/outpatient), educational level, and work status. Participants received detailed instructions on completing the CSQ-8 questionnaire, consent was obtained, and the data were collected by a research assistant. Permission was obtained to use the questionnaire for this study. This research was approved by the Institutional Review Board (IRB), log number 22-452.

Data analysis

Data were cleaned and verified prior to analysis, to guarantee a legitimate dataset. Thereafter, descriptive labels were assigned to the numbered response options for each of the CSQ8 questions, to facilitate interpretation of the results. For instance, the response options for the first question, which asks participants to assess the level of service, were

as follows: 1-Poor, 2-Fair, 3-Good, and 4-Excellent. This procedure was repeated for each question, ensuring that the rank order was upheld. For instance, the four possible answers to question 8 on the CSQ-8 are 1-No, absolutely not; 2-No, I don't think so; 3-Yes, I think so; 4-Definitely, yes. Thus, all questions have the same rank order, with response option 1 being the least favourable, and response option 4 being the most favourable, despite differences in verbal descriptors. The authors utilised percentages to portray the CSQ-8 results according to the four degrees of satisfaction, since they could not find such uniformity in any other data presentation techniques. Data were analysed using the Statistical Package for the Social Sciences (IBM SPSS Statistics 20). Descriptive statistics (means, standard deviation, and

frequencies) were used to summarise the participants' sociodemographic characteristics as well as their responses to the eight questions measuring their satisfaction with the wound care services. A 0.05 significance threshold was used to determine whether mean differences between subgroups were significant for each CSQ-8 question.

III. RESULTS

Sociodemographic characteristics

Of the 160 participants, 25% were older than 60 years and 16% were younger than 30 years, as illustrated in Table 1. Females represented 52%, the majority of respondents were married (68%), 31% had a college or university degree, and 52% were unemployed. 80% of participants received inpatient wound care services.

Table 1. Sociodemographic characteristics of study participants

Sociodemographic Characteristics of 160 Participants		
Characteristic	Description	N (%)
Age (years)	≤ 30	26 (16.3)
	31-40	36 (22.5)
	41-50	29 (18.1)
	51-60	29 (18.1)
	> 60	40 (25.0)
Gender	Female	83 (51.9)
	Male	77 (48.1)
Marital Status	Married	109 (68.1)
	Not married	35 (21.9)
	Divorced	6 (3.8)
	Widowed	10 (6.3)
Academic Level	Elementary school or lower	32 (20.0)
	Middle school	34 (21.3)
	High School	44 (27.5)
	University/College	50 (31.3)
Employment Status	Employee	46 (28.8)
	Retired	31 (19.4)
	Unemployed	83 (51.9)
Service	Clinic	29 (18.1)
	Inpatient	131 (81.9)

Satisfaction with wound care services

The study's overall findings were very positive. Considered together (response options 4 and/or 3), a majority of respondents (91.3%) rated the quality of service they received as "excellent" or "good", while 85.6% received the kind of service they wanted, as

illustrated in Table 2. Most of the respondents (81%) indicated that the

services provided met "most" or "almost all" of their needs: the majority (90.7%) would recommend the services of the wound care unit to friends who needed help; and 90.6% were "very satisfied" or

“mostly satisfied” with the level of help they received. 92.5% of respondents reported that the services they received helped them “a great deal” or “somewhat” in dealing with their problem. Regarding overall satisfaction, 92.5% reported feeling “very satisfied” or “mostly satisfied” with the services they received overall. Finally, 89.4% of respondents reported that they would return to the wound care service if they needed help again.

Table 2. Satisfaction with wound care services

Satisfaction with Wound Care Services		
Characteristic	Description	N (%)
How would you rate the quality of service you received?	Poor	6 (3.8)
	Fair	8 (5.0)
	Good	51 (31.9)
	Excellent	95 (59.4)
Did you get the kind of service you wanted?	No, I did not	7 (4.4)
	No, not really	16 (10.0)
	Yes, generally	56 (35.0)
	Yes, definitely	81 (50.6)
To what extent have our services met your needs?	None of my needs have been met	6 (3.8)
	Only a few of my needs have been met	23 (14.4)
	Most of my needs have been met	46 (28.8)
	Almost all of my needs have been met	85 (53.1)
If a friend were in need of similar help, would you recommend our services to him or her?	No, definitely not	6 (3.8)
	No, I don't think so	9 (5.6)
	Yes, I think so	34 (21.3)
	Yes, definitely	111 (69.4)
How satisfied are you with the amount of help you received?	Quite dissatisfied	5 (3.1)
	Indifferent or mildly dissatisfied	10 (6.3)
	Mostly satisfied	49 (30.6)
	Very satisfied	96 (60.0)
Have the services you received helped you to deal more effectively with your problem?	No, they really didn't help	9 (5.6)
	No, they seemed to make things worse	3 (1.9)
	Yes, they helped somewhat	45 (28.1)
	Yes, they helped a great deal	103 (64.4)
Overall, how satisfied are you with the service you received?	Quite dissatisfied	4 (2.5)
	Indifferent or mildly dissatisfied	8 (5.0)
	Mostly satisfied	47 (29.4)
	Very satisfied	101 (63.1)
If you were to seek help again, would you make use of our services?	No, definitely not	6 (3.8)
	No, I don't think so	11 (6.9)
	Yes, I think so	41 (25.6)
	Yes, definitely	102 (63.8)

IV. DISCUSSION

This cross-sectional descriptive study examined patient satisfaction with wound care services in Riyadh's tertiary healthcare setting, and found that most respondents rated the quality of service as

“excellent” and were very satisfied with the service they received overall. These findings are similar to those of many other studies measuring patient satisfaction with wound care services in different healthcare settings. For example, a study conducted

in Qatar [24] showed that patients were generally satisfied with wound care services delivered by an interprofessional team; as assessed by the CSQ-8, their results revealed favourable satisfaction ratings ranging from 67.9% to 90.1% [24]. Our findings are also consistent with a study in which most patients reported high satisfaction with wound care from a nurse-led clinic [13,23].

Most of the participants in our study reported receiving the kind of service they wanted and were very satisfied with the level of help they received in dealing with their problem; these responses indicate a positive experience with the clinic. This finding is in alignment with a study that explored the experiences and satisfaction of patients receiving wound care consultations for acute wounds, which found that participants were satisfied with the accessibility and comprehensiveness of the wound service delivery, and that they trusted the healthcare providers [28]. These results also support the findings of international studies, which showed a positive experience with NP-led wound care [14-16].

Most of our respondents reported that the services they received helped them “a great deal” or “somewhat” in dealing with their problem, and would recommend these services to friends who needed help. This is similar to the findings of other studies [15] that reported improved wound healing and high levels of client satisfaction. Furthermore, it agrees with a study [29] that revealed a good level of patient satisfaction with health services in hospitals. Yet another study confirmed the quality of services provided by nurse-led clinics, finding that entrusting specialised nurses with chronic wound care produced better results than standard practice with regard to wound healing, repair and regeneration, duration of treatment, and readmission rates [30]. On the contrary, one study reported that, although the majority were satisfied, a few participants did not experience satisfactory wound healing and moved on to another service [31].

Furthermore, our results are similar to those of other studies assessing the patient and family experience of attending a nurse-led clinic for chronic wounds; the findings highlighted client satisfaction and physical accessibility as benefits of the clinic [11], as well as high-level patient satisfaction [13]. Other studies revealed positive experiences of nurse practitioner care [14] and nurse-led multidisciplinary team care [16].

Providing optimum patient outcomes (wound healing) and positive patient experiences is challenging [20]. Despite a positive patient experience with the nurse-led wound care clinic, nurses demonstrated in a study that wound care management involves decision-making that requires multidisciplinary and holistic approaches, tempered with knowledge about the patient and the expertise of others [32]. The potential expansion of the wound clinic model of care in general practices is centred around enhancing nurses’ readiness, confidence, and capability in managing wounds and improving patient outcomes [33,34]. Thus, wound care nurses must strive for improvement in their aseptic technique, hand hygiene, pain assessment, patient education, and documentation [35,36].

Given that this study was conducted in a hospital, the findings could not fully reflect the conditions at other facilities providing wound care services. Thus, these results cannot be immediately applied to other situations. Moreover, the researcher used a cross-sectional study design, which may be subject to recall bias, as well as a structured questionnaire to collect data, which limits participants to preset responses to given questions, without the option to explain further. As a result, further information could not be collected about why some patients felt their needs had not been met.

V. CONCLUSION

In conclusion, patient satisfaction with the wound care services was high, although there remains weakness in certain areas. This should be investigated in greater detail so that actions may be taken to improve the quality of healthcare services through appropriate policies and strategies. Further research is suggested in different settings to assess patient satisfaction on a larger scale.

VI. DECLARATION OF INTERESTS

The authors have no conflicts of interest to disclose.

VII. REFERENCES

1. Järbrink K, Ni G, Sönnerngren H, Schmidtchen A, Pang C, Bajpai R, Car J. The humanistic and economic burden of chronic wounds: a protocol for a systematic review. *Systematic reviews*. 2017 Dec;6(1):1-7.
2. Olsson M, Järbrink K, Divakar U, Bajpai R, Upton Z, Schmidtchen A, Car J. The humanistic and economic burden of chronic wounds: A systematic

- review. *Wound repair and regeneration*. 2019 Jan;27(1): 114-25.doi: 10.1111/wrr.12683.
3. Sen CK. Human wound and its burden: updated 2020 compendium of estimates. *Advances in Wound Care*. 2021 May 1;10(5):281-92. doi: 10.1089/wound.2021.0026.
4. Lo ZJ, Lim X, Eng D, Car J, Hong Q, Yong E, Zhang L, Chandrasekar S, Tan GW, Chan YM, Sim SC. Clinical and economic burden of wound care in the tropics: a 5-year institutional population health review. *International Wound Journal*. 2020 Jun;17(3):790-803. <https://doi.org/10.1111/iwj.13333>
5. Alshammary S, Othman SA, Alshammari E, Alarfaj MA, Lardhi HA, Amer NM, Elsaid AS, Alghamdi HM. Economic impact of diabetic foot ulcers on healthcare in Saudi Arabia: a retrospective study. *Annals of Saudi Medicine*. 2020 Sep;40(5):425-35. <https://doi.org/10.5144/0256-4947.2020.425>
6. Samaniego-Ruiz MJ, Llatas FP, Jiménez OS. Assessment of chronic wounds in adults: an integrative review. *Revista da Escola de Enfermagem da USP*. 2018 Jun 25;52.<https://doi.org/10.1590/S1980-220X2016050903315>
7. Gillespie BM, Walker R, Lin F, Roberts S, Eskes A, Perry J, Birgan S, Nieuwenhoven P, Garrahy E, Probert R, Chaboyer W. Wound care practices across two acute care settings: A comparative study. *Journal of Clinical Nursing*. 2020 Mar;29(5-6):831-9. <https://doi.org/10.1111/jocn.15135>
8. Chen YT, Chang CC, Shen JH, Lin WN, Chen MY. Demonstrating a conceptual framework to provide efficient wound management service for a wound care center in a tertiary hospital. *Medicine*. 2015 Nov;94(44). doi: 10.1097/MD.0000000000001962
9. Jan M, Almutairi KH, Aldugman MA, Althomali RN, Almujafer FM, Mughaedh NA, Alhadi LN. Knowledge, attitudes, and practices regarding wound care among general population in Aseer region. *Journal of Family Medicine and Primary Care*. 2021 Apr;10(4):1731. doi: 10.4103/jfmpc.jfmpc_2331_20
10. Malaekah HM, Alotaibi AE, Alsebaile RA, Alelawi GT, Alsarrani RH, Banjar WM. Wound care knowledge and perception of the Saudi general population in Riyadh Region. *Advances in Wound Care*. 2021 Jun 1;10(6):293-300. <https://doi.org/10.1089/wound.2020.1210>
11. Dhar A, Needham J, Gibb M, Coyne E. The client and family experience of attending a nurse-led clinic for chronic wounds. *Wound Practice & Research*. 2021 Jun 1;29(2).
12. Young T, Ryzy J, Cryer S, Clark M. An initiative to improve the effectiveness of wound healing within GP Practices. *Wounds UK*. 2019 Jan 1;15(1).
13. Morrell S. Health care initiative to evaluate the impact of a nurse practitioner led community wound care service on emergency department utilization (2021). *Electronic Thesis and Dissertation Repository*. 7648.<https://ir.lib.uwo.ca/etd/7648>
14. Morrell S, Pittman G. Patient experience with an NP-led community wound care service. *Nurse Practitioner Open Journal*. 2022 Jul 13;2(1). DOI: <https://doi.org/10.28984/npoj.v2i1.372>
15. Dhar A, Needham J, Gibb M, Coyne E. The outcomes and experience of people receiving community-based nurse-led wound care: A systematic review. *Journal of Clinical Nursing*. 2020 Aug;29(15-16):2820-33. <https://doi.org/10.1111/jocn.15278>
16. Nayeri ND, Samadi N, Mehrnoush N, Allahyari I, Bezaatpour F, NaseriAsl M. Experiences of nurses within a nurse-led multidisciplinary approach in providing care for patients with diabetic foot ulcer. *Journal of Family Medicine and Primary Care*. 2020 Jun;9(6):3136. doi: 10.4103/jfmpc.jfmpc_1008_19
17. Monaro S, Pinkova J, Ko N, Stromsmoe N, Gullick J. Chronic wound care delivery in wound clinics, community nursing, and residential aged care settings: a qualitative analysis using Levine's Conservation Model. *Journal of Clinical Nursing*. 2021 May;30(9-10):1295-311. <https://doi.org/10.1111/jocn.15674>
18. Varga MA, Holloway SL. The lived experience of the wound care nurse in caring for patients with pressure ulcers. *International Wound Journal*. 2016 Apr;13(2):243-51. <https://doi.org/10.1111/iwj.12279>
19. Guest JF, Ayoub N, McIlwraith T, Uchegbu I, Gerrish A, Weidlich D, Vowden K, Vowden P. Health economic burden that wounds impose on the National Health Service in the UK. *BMJ Open*. 2015 Dec 1;5(12):e009283. <http://dx.doi.org/10.1136/bmjopen-2015-009283>

20. Annesley SH. Current thinking on caring for patients with a wound: a practical approach. *British Journal of Nursing*. 2019 Mar 14;28(5):290-4. <https://doi.org/10.12968/bjon.2019.28.5.290>
21. Bobbink P, Pugliese MT, Larkin P, Probst S. Nurse-led patient education for persons suffering from a venous leg ulcer in outpatient clinics and homecare settings: A scoping review. *Journal of Tissue Viability*. 2020 Nov 1;29(4):297-309. <https://doi.org/10.1016/j.jtv.2020.08.006>
22. Corrin I. A service evaluation to examine the experience of patients attending wound healing outpatient clinics in South Wales. *British Journal of Community Nursing*. 2018 Jun 1;23(Sup6): S6-12.
23. Levine JM, Brandeis G, Namagiri S, Spinner R. Wound care consultation in postacute/long-term care: Characteristics and practice implications. *Advances in Skin & Wound Care*. 2021 Aug 1;34(8):417-21.
24. AlQahtani S. Patient satisfaction with an interprofessional approach to wound care in Qatar (Doctoral dissertation, University of Calgary). 2016. doi:10.11575/PRISM/27273
25. Attkisson CC, Zwick R. The client satisfaction questionnaire. Psychometric properties and correlations with service utilization and psychotherapy outcomes. *Eval Program Plann*. 1982; 5(3): 233-237. doi: 10.1016/0149-7189(82)90074-X
26. Nguyen TD, Attkisson CC, Stegner BL. Assessment of patient satisfaction: Development and refinement of a service evaluation questionnaire. *Eval Program Plann*. 1983; 6(3-4): 299-313. doi: 10.1016/0149-7189 (83)90010-1
27. De Wilde EF, Hendriks VM. The Client Satisfaction Questionnaire: Psychometric properties in a Dutch addict population. *Eur Addict Res*. 2005; 11(4): 157-162. doi: 10.1159/000086396
28. Sheehan L, Dias S, Joseph M, Mungroo S, Pantinople J, Lee K. Primary care wound clinics: A qualitative descriptive study of patient experiences in community pharmacies. *Pharmacy*. 2022 Aug 17;10(4):99. <https://doi.org/10.3390/pharmacy10040099>
29. Manzoor F, Wei L, Hussain A, Asif M, Shah SI. Patient satisfaction with health care services; an application of physician's behavior as a moderator. *International Journal of Environmental Research and Public Health*. 2019 Sep;16(18):3318. doi:10.3390/ijerph16183318
30. Sili A, Zaghini F, Monaco D, Dal Molin A, Mosca N, Piredda M, Fiorini J. Specialized nurse-led care of chronic wounds during hospitalization and after discharge: A randomized controlled trial. *Advances in Skin & Wound Care*. 2023 Jan 1;36(1):24-9.DOI: 10.1097/01.ASW.0000897444.78712.fb
31. Dhar A, Needham J, Gibb M, Coyne E. The client and family experience of attending a nurse-led clinic for chronic wounds. *Australian Journal of Primary Health*. 2023 Nov 6;30(1):NULL-.<https://doi.org/10.1071/PY23081>
32. Tayyib NA, Ramaiah P. Nurses' challenges in wound care management - A qualitative study. *Journal of Clinical & Diagnostic Research*. 2021 Mar 1;15(3). DOI: 10.7860/JCDR/2021/47039.14626
33. Stevenson PA. Education Plan to Empower Wound Care Nurses for Evidence-Based Practice (Doctoral dissertation, Walden University). 2018. <https://scholarworks.waldenu.edu/dissertations>
34. Innes-Walker K, Parker CN, Finlayson KJ, Brooks M, Young L, Morley N, Maresco-Pennisi D, Edwards HE. Improving patient outcomes by coaching primary health general practitioners and practice nurses in evidence-based wound management at on-site wound clinics. *Collegian*. 2019 Feb 1;26(1):62-8. <https://doi.org/10.1016/j.colegn.2018.03.004>
35. Timmins BA, Thomas Riché C, Saint-Jean MW, Tuck J, Merry L. Nursing wound care practices in Haiti: facilitators and barriers to quality care. *International Nursing Review*. 2018 Dec;65(4):542-9. <https://doi.org/10.1111/inr.12438>
36. Kielo E, Suhonen R, Salminen L, Stolt M. Competence areas for registered nurses and podiatrists in chronic wound care, and their role in wound care practice. *Journal of Clinical Nursing*. 2019 Nov;28(21-22):4021-34. <https://doi.org/10.1111/jocn.14991>